



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TEXAS 75202 - 2733

JUL - 5 2016

CERTIFIED MAIL-- RETURN RECEIPT REQUESTED: 7004 1160 0003 0358 5276

Mr. Richard Ieyoub, Sr., Commissioner  
Office of Conservation  
Louisiana Department of Natural Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275

Dear Mr. Ieyoub:

This letter transmits Environmental Protection Agency's (EPA) end of-year (EOY) evaluation of Louisiana's Underground Injection Control (UIC) program for Fiscal Year 2015 (FY15). Region 6 UIC oversight staff provided the draft FY15 program review to Mr. Stephen Lee of your staff on June 1, 2016. Mr. Lee commented on our draft EOY evaluation on or before June 21, 2016 and any appropriate changes are included.

Oversight of State UIC programs remains a priority for Region 6. I commend the staff of Office of Conservation's Injection and Mining Division (IMD) in effectively meeting or exceeding FY15 UIC grant work plan program targets.

If you wish to discuss any aspect of this EOY evaluation, call me at (214) 665-7101, or your staff may call Mr. Philip Dellinger at (214) 665-8324. If your staff has specific questions about UIC grant performance, please contact Mr. Michael Vaughan at (214) 665-7313 or Ms. Jana Harvill at (214) 665-8369 for questions regarding EPA's program oversight.

Sincerely yours,

A handwritten signature in blue ink, which appears to read "WK Honker", is positioned above the typed name.

William K. Honker, P.E.  
Director  
Water Division

Enclosure

cc: Steve Lee, OC/IMD Director, w/encl.



FISCAL YEAR 2015 END-OF-YEAR REVIEW LOUISIANA  
DEPARTMENT OF NATURAL RESOURCES (LDNR) OFFICE OF  
CONSERVATION  
UNDERGROUND INJECTION CONTROL (UIC) PROGRAM

**EXECUTIVE SUMMARY**

This oversight report details the significant accomplishments of Louisiana's Office of Conservation (OC) Injection Mining Division (IMD) in meeting the fiscal year 2015 (FY15) UIC grant workplan commitments between July 1, 2014 and June 30, 2015. EPA oversight discussion is presented in the second part of this annual evaluation required in the State/EPA Primacy memorandum of agreement between our agencies. The State UIC program met or exceeded most reporting and targeted field activities within the annual State UIC grant workplan.

**FY15 UIC GRANT END-OF-YEAR ACCOMPLISHMENTS:**

**FY15 STAG Funding**-The federal FY15 grant allotment for the State of Louisiana's UIC program administered by the OC was \$328,000 in UIC programmatic funds. This allotment was awarded as the annual State and Tribal Assistance Grant (STAG) to OC during FY15. The OC also received \$32,200 in UIC Special Project funds during FY15.

**Workplan Deliverables**-Table 1 identifies State program updates and other deliverables submitted pursuant to the FY15 STAG UIC grant work plan. IMD staff submitted all deliverables as mandated in the above referenced workplan. In addition, Table 2 shows the degree of accomplishment for selected program activities targeted in the FY15 UIC grant work plan. LDNR's efforts on these fundamental program activities continue to be impressive.

**Quality Assurance Annual Update**-Pursuant to regulatory requirements and policies of EPA, all environmental programs conducted on behalf of EPA will establish and implement effective quality systems. The Quality Management Plan (QMP) and Quality Assurance Project Plan (QAPP) must be updated annually. If both the QMP and QAPP are current and valid, EPA requires each state to annually certify that both plans are current by submitting updated signatory pages and organizational charts as applicable. As part of the FY15 STAG UIC grant work plan, OC staff committed to submit to Region 6 annual quality assurance certifications and new signatory pages before the expiration dates. The FY15 QMP [QTRAK #15-274] was approved by Region 6 on 5/26/2015, and expires on 5/26/2016. The FY15 QAPP [QTRAK #15-212] was approved by Region 6 on 4/01/2015, and expires on 4/01/2016.



**Table 1. Grant deliverables in FY15 UIC Workplan.**

Grant Deliverable	Due Date	Date Received
Quarterly Reports (EPA Forms 7520) and Compliance Order Tracking Report	April 30; October 31	June 3, 2016
FY15 Grant Application	Grant Workplan 5/01/2014	Application Received- 4/28/2014
FY15 Grant Workplan		Workplan Received- 4/28/2014
		Approved- 6/2014
Final Financial Status Report (FY15)		10/15/2015. The grant is closed.
Annual UIC Program Report (FY15)	8/30/2015	1/06/2016
Update on Program, Regulatory or Statutory Changes	8/30/2015	1/06/2016-Info included in Annual UIC Program Report FY15
Annual QMP/QAPP Updates*	QMP	Received-5/15/2015 Approved-5/26/2015 Expires-5/26/2016
	QAPP	Received-3/27/2015 Approved 4/01/2015 Expires-4/01/2016
UIC Well Inventory for FY15	12/18/2014	12/18/2014

\* The Quality Management Plan (QMP) and Quality Assurance Project Plan (QAPP) are updated annually for tracking any program modifications, concurrences, and/or organizational changes.

**Table 2. FY15 Work plan Target and End-of-Year Accomplishments, Program activities and end-of-year level of accomplishment for grant related activities.**

Program Activity	Well Class	FY15 Target	Actual End-of-Year Values	Target%
MITs (PART I and II)	I	21	33	Over 100%
	II (SWD & EOR)	800	1409	Over 100%
	II (Storage)	15	27	Over 100%
	III	15	12*	80%
ROUTINE INSPECTIONS	I	80	66*	83%
	II (SWD & EOR)	2,500	3177	Over 100%
	II (Storage)	40	47	Over 100%
	III	20	29	Over 100%
WITNESSED MITs (PART I only)	I	80	59*	74%*
	II (SWD & EOR)	1,300	1,647	Over 100%
COMPLIANCE REVIEWS	I	36	38	100%
	II (SWD & EOR)	500	727	Over 100%
	II (Storage)	35	48	Over 100%
	III	25	42	Over 100%

\* The total Class I inventory is 34, each requiring testing every six months. Projection should have been 68. All Class I wells were inspected and had MITs witnessed during FY15.



## PROGRAM OVERSIGHT DISCUSSION:

**State Class II UIC Program Revisions-** There were no program, regulatory, or statutory changes in the Louisiana UIC program during State Fiscal Year 2015. The proposed revisions to the existing rules for Class II Hydrocarbon Storage Wells in Salt Dome Cavities were published and promulgation is expected in 2016. The proposed rule revision is the result of legislation passed in the 2014 Regular Louisiana Legislative Session. The new hydrocarbon storage rules will be located at LAC 43:XIX.Chapter 3 (Statewide Order No. 29-M). The proposed revisions to the existing rules for Enhanced Oil Recovery wells utilizing carbon dioxide (CO2) were published and promulgation is expected in 2016. The new Enhanced Oil Recovery rules will be located at LAC 43:XVII.Chapter 4 (Statewide Order No. 29-B)

**Class II MITs Performed Compared to UIC Well Inventory-In** FY15, OC performed 1,409 two-part mechanical integrity tests (MITs) on Class II wells, including produced water disposal, enhanced recovery, and liquid petroleum storage wells. The first part of an MIT is an external evaluation of the potential for upward migration between the long-string casing and formation, typically an evaluation of a cement bond log by IMD engineer staff. LDNR's UIC field inspectors witness the second part MIT, typically a scheduled internal pressure test of the annular space between the tubing, packer, and long-string casing. Based on the actual values reported in OC's annual report required in the grant work plan, we assume that every Class II well in Louisiana is likely evaluated for mechanical integrity at least once during the last five years as required by EPA approved State UIC regulations.

**Table 3. Number of Class II MITs (two-part) conducted between FY2006 and FY2015, annual inventory and variance between number of five-year MITs and annual inventory.**

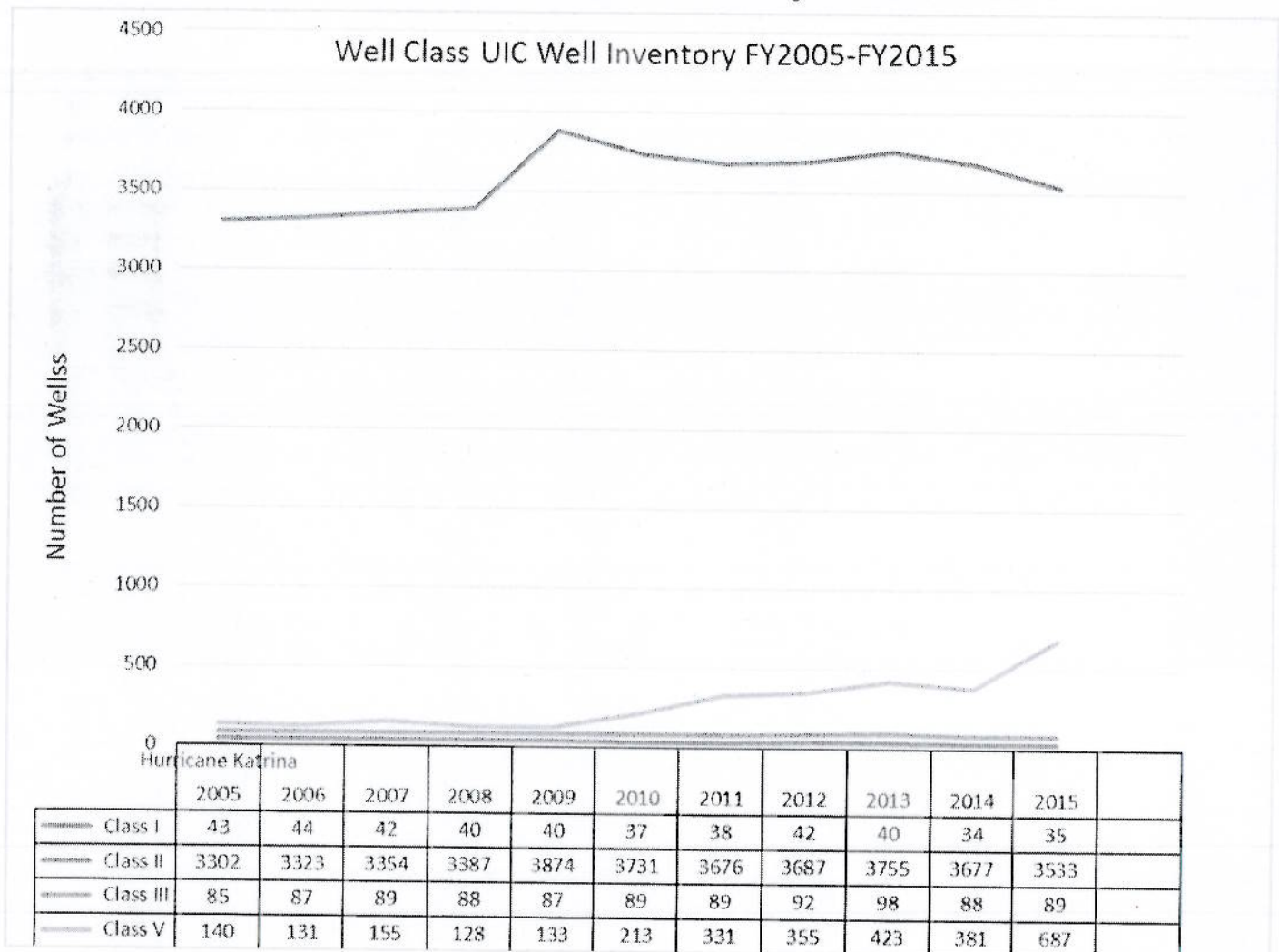
Fiscal Year	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Annual MITs (Two-part)	1,409	1,366	1,302	1,009	1,102	1,198	825	760	747	777
Cumulative MITs Last five-year	5,130	5,977	5,436	4,894	4,632	4,307	4,052	4,192	4,122	3,864
Annual Inventory	3533	3677	3755	3687	3676	3731	3874	3387	3354	3323
Variance (MITs v. Inventory)	1,597	2,300	1,681	1,207	956	576	178	805	768	541

Variance based on State UIC program annual well inventory; 2010 Class II inventory value included UIC-14 disposal wells which are not included in reported UIC MIT values since FY10.

**Well Inventory v. Annual Reporting-** The Louisiana UIC well inventory values reported since fiscal year 2005 are shown by well class in Chart 1. The OC Injection and Mining Division (IMD) historically reports the total UIC well inventory by the various classes of injection/disposal wells as requested by EPA near the end of each calendar year, last reported December 2015. Chart 2 compares the Class II well inventory to the number of Class II UIC well annual operator reports submitted since 2005; most Class II well operators submit the required annual reports in the spring following the calendar year reporting period.

Class II wells had an inventory spike in 2009 from previous years and since that time, with a one-time uptick in 2013, the numbers have leveled off ranging from 3533 to 3755. IMD has had good success of annual reports submitted in years prior to 2014. In 2014, there was only 73% annual reports submitted. For 2015, there were 3144 annual reports submitted.

**Chart 1. Well Class UIC Well Inventory FY2005-FY2015**

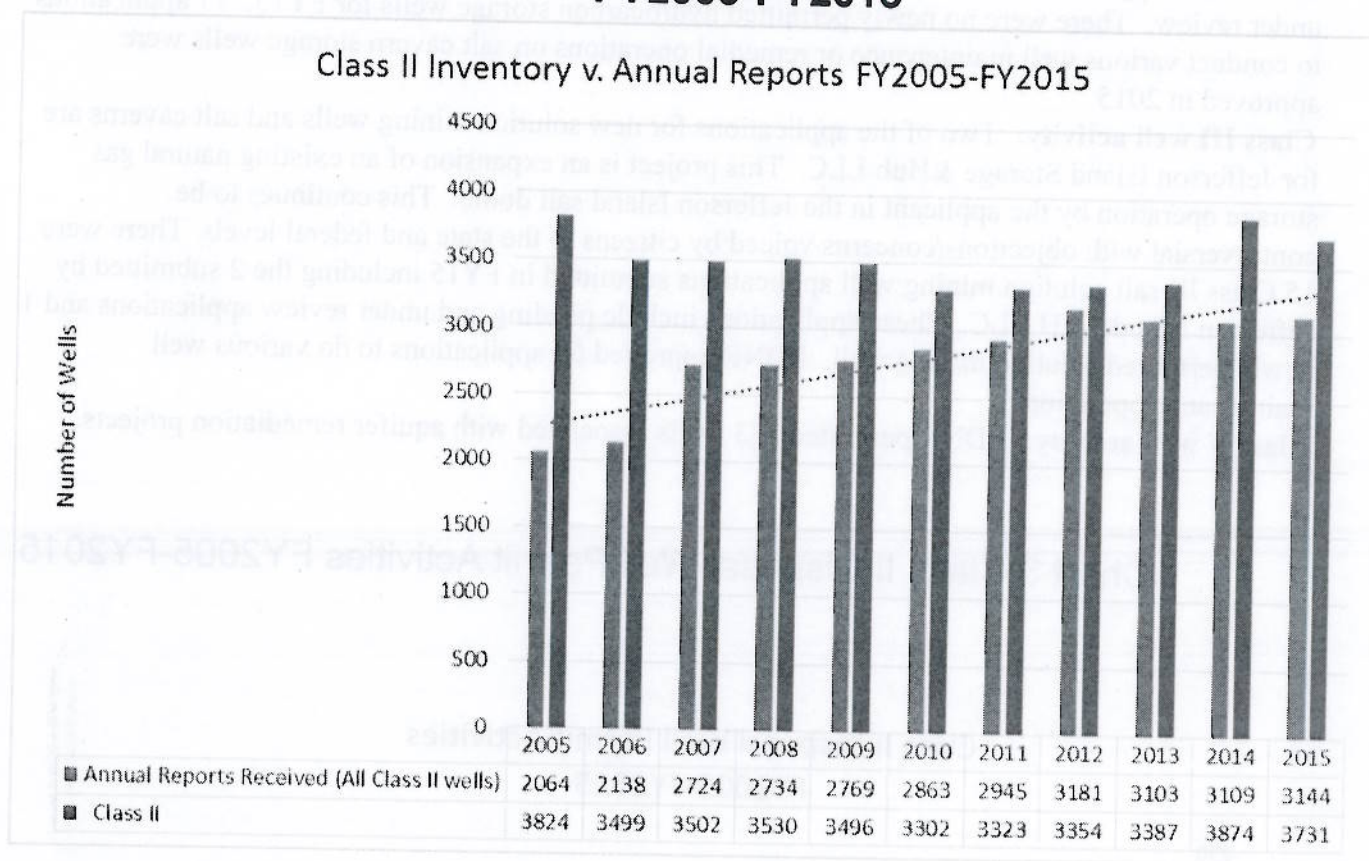








**Chart 2. Class II Inventory vs. Annual Reports  
FY2005-FY2015**



**Permitting and Enforcement Actions-** LDNR submitted EPA Forms 7520-2A, 7520-2B, 7520-4, the Quarterly Exceptions List along with the Compliance Order Tracking Report, and Annual Program Report for FY15. Charts 3, 4, and 5 show permitting and compliance trends compiled from this information.

**Class I well activity:** LDNR had three new Class I well permit applications, which are still under review. In addition, there were 26 applications to re-permit existing Class I wells. LDNR forwarded one application to the Railroad Commission of Texas for comment. There were none forwarded by the Texas Railroad Commission to LDNR.

**Class II well activity:** LDNR was in receipt of 88 applications to drill new injectors or to convert existing wells. A total of 90 permits were issued for new drill injectors or converted wells to injectors. There were 4 denied applications and an additional 447 applications to conduct various activities. There were a total of 49 applications received for annular mud disposal. Of the 49 applications, 33 were approved. The Enhanced Recovery(ER) Activities included 43 permit applications to drill new wells or convert existing wells to ER injectors. Of the 43, LDNR issued 24

permit applications to drill new ER wells or convert. Approval was also given to 32 applications to conduct various well maintenance operations. New well permits were issued to 4 facilities, and an additional 3 applications are under review. LDNR currently has 3 Hydrocarbon storage applications under review. There were no newly permitted hydrocarbon storage wells for FY15. 77 applications to conduct various well maintenance or remedial operations on salt cavern storage wells were approved in 2015.

**Class III well activity:** Two of the applications for new solution mining wells and salt caverns are for Jefferson Island Storage & Hub LLC. This project is an expansion of an existing natural gas storage operation by the applicant in the Jefferson Island salt dome. This continues to be controversial with objections/concerns voiced by citizens to the state and federal levels. There were 15 Class III salt solution mining well applications submitted in FY15 including the 2 submitted by Jefferson Island S&H LLC. These applications include pending and under review applications and 1 newly permitted solution mining well. LDNR approved 62 applications to do various well maintenance operations.

**Class V well activity:** LDNR permitted 233 wells associated with aquifer remediation projects.

Chart 3 Class II Disposal Well Permit Activities FY2005-FY2015

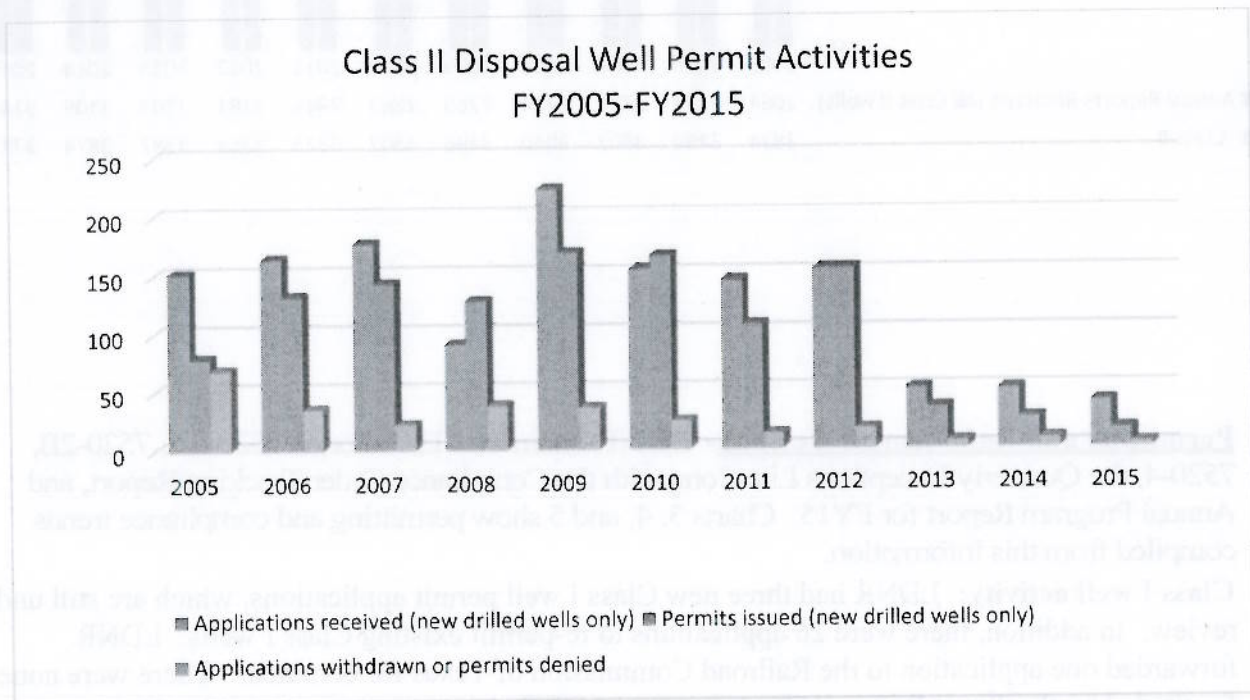
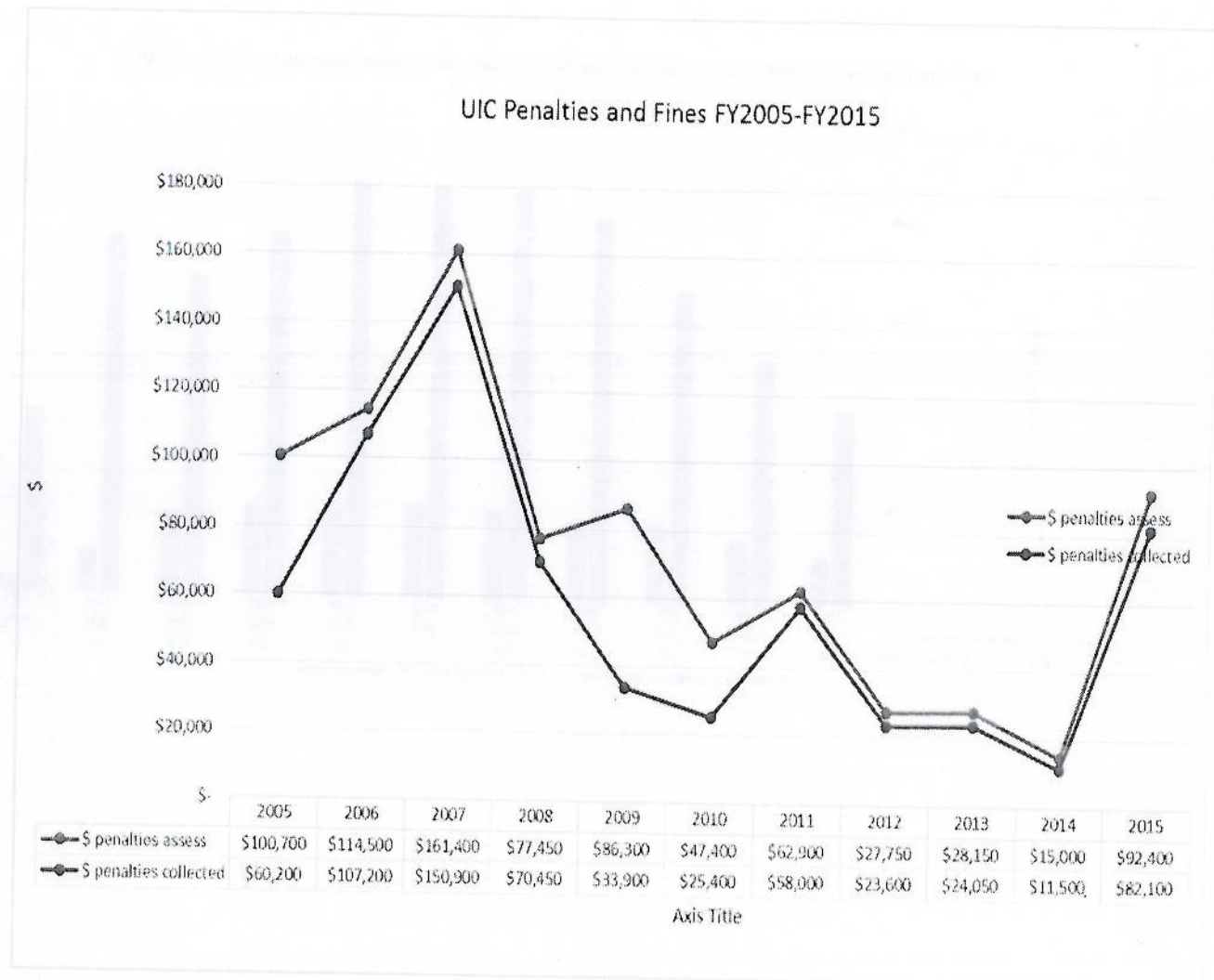


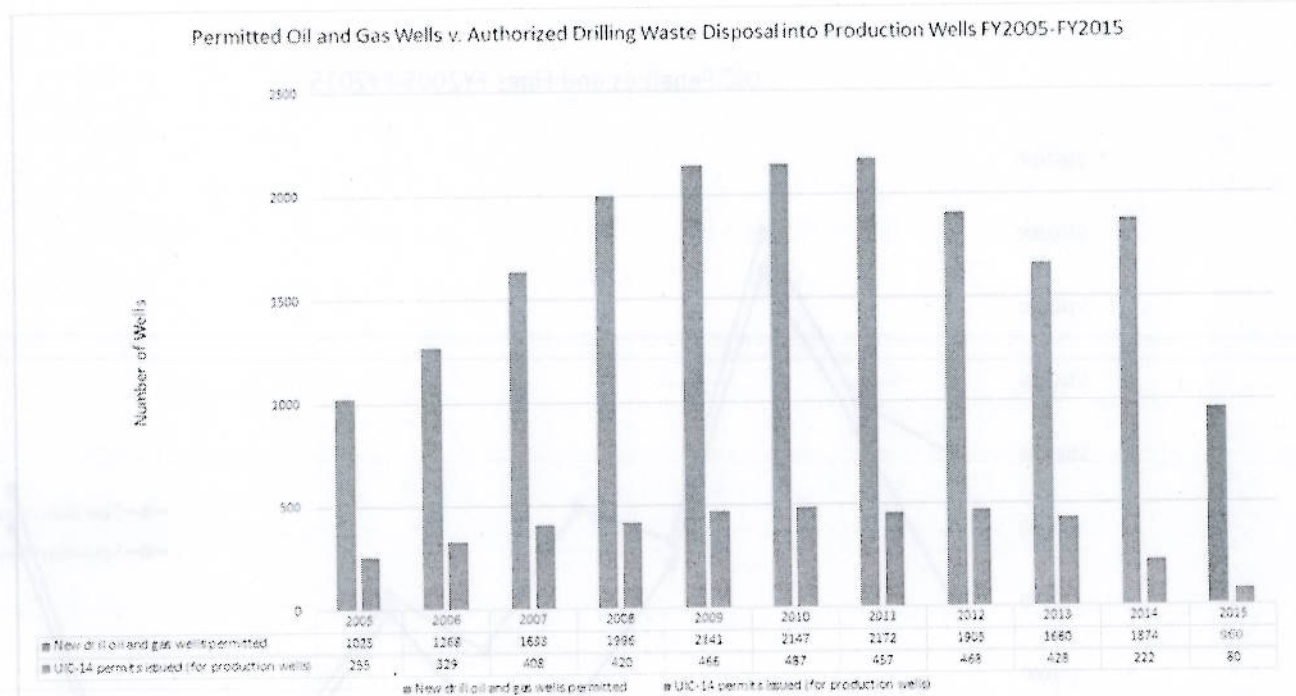


Chart 4. UIC Penalties and Fines FY2005-FY2015





**Chart 5. Permitted Oil and Gas Wells vs. Authorized Drilling Waste Disposal into Production Wells FY2005-FY2015**



**Oversight issues:** EPA continues to participate in quarterly conference calls regarding the Bayou Corne sinkhole. There have been approximately 1,600 micro earthquake activities (MEQs), between October 2015 and January 2016. In November and early December 2015, there was a significant increase in the MEQs. These events were followed by a sharp drop off in activity on December 7, 2015. Possible explanations given for the increased MEQ activity were salt flow and impurities, sediment adjustment, increase in rainfall, and natural activity. The current MEQ activity is much deeper and lower in magnitude by an order of 3 to 4 times than that seen during the sinkhole formation.

**Staffing issues:** In spite of the recent downturn in the oil and gas industry, LDNR has been able to maintain technical staffing levels. At one point, LDNR was challenged with the potential of losing approximately 40% of their staff, but so far, the department has been able to hire and backfill, as needed. LDNR is commended for maintaining adequate staffing levels for UIC Program responsibilities.

**IMD GS-09:** The GS-09 standards allow increases in the Maximum Authorized Surface Injection Pressure (MASIP) as long as a demonstration is made by the applicant that "USDWs are protected". EPA has expressed concerns on these standards in its oversight discussions and in a previous EPA annual review (FY2012).

Currently, approximately 24 active wells operate with MASIP increased under IMD GS-09. These increases were requested by the operators after the wells were originally permitted and injection had begun. On April 18, 2016, three Class II SWD wells operated by Basic Energy Services, L.P. were shut-in due to pressures exceeding the pressure increased under GS-09. On May 5, 2016, Basic Energy Services, L.P. was issued a compliance order for the three wells in Northern Louisiana with assessed civil penalties for violating LAC 43:XIX.Subpart 1.Chapters 3, 4, and 5. LDNR is currently reviewing the use of IMD GS-09, and its potential threat to USDWs. With the review of GS-09 policy on-going, LDNR has only increased the MASIP using the GS-09 policy on three wells from July 1, 2013 to June 30, 2015.

